“Green governance and investor value: An empirical study of sustainability practices among Nigerian listed industrial firms”

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GREEN GOVERNANCE AND INVESTOR VALUE: AN EMPIRICAL STUDY OF SUSTAINABILITY PRACTICES AMONG NIGERIAN LISTED INDUSTRIAL FIRMS

Abstract

The study considers the impact of green governance on investor wealth through the sustainability performance of manufacturing firms in Nigeria from 2015 to 2024. The green governance variables considered in the study include environmental expense ratio, sustainability index score, social expense ratio, and environmental, social, and governance (ESG) facilitators score against earnings per share (EPS) as a proxy for investor wealth. The study adopts the ex post facto research design. This paper employed fixed-effects panel regression to analyze panel data from Dangote Cement, Lafarge Africa, and BUA Cement. The model has an overall predictive ability of 67.4%; therefore, the model was found to be appropriate (p = .001, F = 12.83). The sustainability index score (β = 0.186, p = 0.013), social expense ratio (β = 5.487, p = 0.027), and ESG facilitators scores (β = 0.212, p = 0.018) were found to be significantly and positively related to profitability, while the environmental expense ratio (β = – 1.908, p = 0.312) was found to be non-significant. It can be argued based on the findings that sustainability initiatives combined with social investment and transparent governance practices can increase the wealth of investors. But the environmental expense ratio might take more time before it turns into profitability. The research findings highlighted the theoretical and practical importance of long-term investment in sustainability practices.

Keywords profitability, governance, transparency, disclosure, investment, accountability, responsibility, valuation

JEL Classification G32, M14, Q56, O16

INTRODUCTION

Green governance is a growing aspect of corporate responsibility, especially in those sectors where the externalities of the environment and society are systemically integrated in production processes. In capital markets, the governance structures associated with environmental and social responsibility are commonly assumed to affect how investors assess corporate risk exposure, long-term sustainability, and value creation. The circumstances, however, under which such governance arrangements would lead to economically relevant information for shareholders are still not satisfactorily addressed, particularly in emerging market contexts (OECD, 2020).

This is a critical issue in the Nigerian cement industry. The production of cement is typified by its high energy density, high emission of greenhouse gases, large-scale quarry operations, and long-term interaction with the host communities. Consequently, the cement industry is subjected to incessant environmental and social pressure, which calls for formal governance reactions among listed cement companies. They are in tandem with the growing calls of sustainability-related

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disclosures and quantifiable accountability, which begs the question of the governance structure that deals with environmental, social, and ethical issues and how these structures are placed within the framework of corporate decision-making (Habert et al., 2020).

Although the sustainability indicators in corporate disclosures have become more visible, there remains a fundamental uncertainty about their economic meaning for shareholders. The existence of environmental and social spending, the measures of disclosure, and the indices of composite sustainability are not sufficient to determine whether sustainability governance is a value-relevant instrument or a mere ruse of compliance. This ambiguity becomes especially acute in situations where the capital markets, the enforcement of the regulation, and the institutions of sustainability are in progress (Christensen et al., 2021).

The scientific problem of this study is thus the inconsistent connection between green governance practices and the shareholder wealth of Nigerian listed cement companies. In particular, it examines whether the observed sustainability governance attributes are significantly linked to shareholder value creation or are viewed as economically unpredictable in the industrial goods sector (Plumlee et al., 2015).

1. LITERATURE REVIEW AND HYPOTHESES

The growing trend in corporate sustainability has led to extensive literature examining how environmental, social, and governance (ESG) practices affect a firm's performance. The common thread throughout the majority of the literature is that companies' sustainability initiatives will increase company value if they are incorporated strategically into the organization, thereby enhancing transparency, building stakeholders' trust in the organization, and ultimately creating more efficient use of available resources. This is highly relevant to Nigeria's industrial companies listed on the Nigerian Exchange Group, as these companies face increased pressures from regulators and investors to report and manage their sustainability performance in compliance with international sustainability standards.

One of the most significant contributions made by researchers is the mediating role of intangible assets in the relationships between corporate responsibility and a company's financial performance. Surroca et al. (2010) argue that a company's financial results are enhanced by its corporate social responsibility (CSR) activities because they strengthen a company's innovation capacity, human capital, and the strength of a company's brand. Eccles et al. (2014) also reinforced this view by providing empirical evidence that companies with a strong sustainability culture outperformed companies without such a culture in terms of both stock price performance and accounting measures of performance; internal governance structure and long-term orientation are the two primary ways that a company can create shareholder value.

Another important aspect of a company's sustainability performance is the quality of the company's ESG-related disclosures. Fatemi et al. (2018) demonstrated empirically that a company's ESG performance positively impacts a company's value, specifically when the company makes clear and credible ESG-related disclosures. Similarly, Michelon et al. (2015) found that stakeholder-oriented companies tend to prepare CSR reports of higher quality than other kinds of firms and have, therefore, better recognition and a good reputation with investors. Furthermore, Michelon et al. (2015) showed that firms that are more sustainably outstanding are likely to disclose their CSR. This shows that outside influence from stakeholders and the press can lead to transparent CSR reports.

Frameworks of institutions also influence the sustainable performance of a firm. Khan et al. (2013) empirically revealed a direct link between management remuneration in frontier economies and the disclosure of sustainable reporting; this implies that aligning management remuneration with sustainability objectives produces better stewardship status. Aguilera and Jackson (2003) reported how variations in the frameworks of institutions at the country level influence the diver-

sity of corporate boards, and how these variations influence the manner in which firms in various countries carry out their green governance initiatives. Consequently, for industrial firms in Nigeria, it is imperative to put in place corporate board frameworks that align with the exact corporate culture of every nation, but also comply with the best global procedures.

Financial reporting and evaluation frameworks concerning ecological footprint are basic instruments for measuring green practices. Clarkson et al. (2008) presented factual data that established that firms with stronger sustainability metrics are more likely to provide relevant information about their environmental performance, thereby reinforcing the connection between a company's actions and its accountability. According to Qian et al. (2011), environmental management accounting in local government organizations in Nigeria can positively affect waste management and decision-making by providing examples of how Nigeria's industrial companies can utilize similar methods to improve their operational efficiency.

Ihenyen and Ikegima (2022) found that environmental accounting positively affects company performance in Nigeria, supporting the economic rationale for investment in sustainable initiatives. Another area of research includes the strategic incorporation of sustainability into performance measurement systems (PMS). Searcy (2012) reviewed existing sustainability PMS and created a research agenda that will increase the comparability and integration of future sustainability performance measurement systems.

Schaltegger and Burritt (2010) debated whether sustainability accounting was merely corporate jargon or an effective tool for supporting strategic decision-making. The effectiveness of sustainability accounting depends on how well the tool is utilized. Therefore, by developing strong performance metrics, Nigeria's industrial companies can bridge the gap between sustainability "speak" and measurable results. While many organizations frequently mention "sustainability," they often do so with no evidence to support or measure the effectiveness of their sustainability efforts. Companies have the opportunity to provide a way to measure their sustainability through reliable metrics (performance metrics). By using these types of metrics, an organization can show that its sustainability initiatives produce positive results, which can be measured and quantified, and thus convert a company's claim of being sustainable from a vague promise to a credible, documented achievement that is reflective of a company's commitment to corporate social responsibility.

Additional verification of the business case for sustainability was found in meta-analyses and cross-country studies. Friede et al. (2015) found a small, positive association between corporate social responsibility (CSR) and financial performance across numerous studies. These socially responsible activities tend to result in greater financial rewards. Brammer and Millington (2008) added further complexity to this finding by showing that companies with either very high or very low levels of CSR activity exceeded their peer groups. Having a clear direction regarding a company's sustainability strategy (proactive or minimalist) can be advantageous. Lastly, Deegan (2002) established a theoretical basis for these findings by stating that social and environmental disclosures serve to legitimize a company's existence and maintain the trust of its stakeholders.

A number of factors that influence CSR disclosure include company-specific characteristics and situational factors. Alnajjar (2000) identified profitability and company size as two significant determinants of CSR transparency for U.S. companies. Alnajjar (2000) indicated that a company's ability to absorb the costs of CSR reporting impacts CSR disclosure behavior. Since many of Nigeria's industrial companies have limited resources and would require targeted policy support to develop their sustainability reporting capabilities, this is particularly important for Nigeria's industrial companies. Overall, the literature demonstrates that green governance, through strategic CSR, high-quality CSR reporting, robust performance metrics, and supportive governance structures, can create value for investors. As such, for Nigeria's industrial companies listed on the Nigerian Exchange Group, pursuing such strategies is not only trending globally in terms of sustainability but also provides a pathway to enhanced competitiveness, stakeholder trust, and long-term profitability. Corporate sustainability has evolved

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from being viewed as a moral imperative to being viewed as a strategic necessity to produce social, environmental, and governance performance in parallel to long-term economic value creation.

Stakeholders, Camilleri (2017) maintains, should be indicative of the growth of corporate sustainability away from mere compliance to the creation of shared values from responsible business conduct. This is extremely relevant for industrial corporate development since they are capital and resource-intensive, and their visibility is great in their environmental footprint. The emergence of the sustainability index score has developed as a global benchmark in assessing corporate ESG performance. It is based on stakeholder theory (Donaldson & Preston, 1995), which relates to corporate behavior affecting the various stakeholders in assuring that the interests of shareholders should not be paramount above those of employees, communities, and the environment.

In the Nigerian context of industrial listing, the criteria for generating sustainability scores entail expectations whereby the weighting of these gives rise to an inchoate interpretation of corporate sustainability, which is often misleading to investors and incomplete in its appreciation of corporate value creation. This type of indicator also relates to environmental expenditure ratios, which indicate the level of accountability a corporate practice has to the environment. This is in respect of such expenditures being regarded as the share of the corporation's revenues necessary for environmental measures, such as those designed for pollution control, CO2 reductions, and resource efficiency (Onyinyechi & Olasupo, 2022).

The conceptual underpinning of the joint realization of sustainability and financial gain overlaps with legitimacy theory (Suchman, 1995), which states that companies maintain their legitimacy by behaving in such a way as to fulfill societal expectations. Clark et al. (2015) found evidence to suggest that environmental expenditure increased stakeholder confidence and reduced environmental risk. However, it also concluded that any costs associated with environmental projects were a challenge to efficacy. In Nigeria, manufacturers' environmental expenditure reports do not relate this expenditure to quantifiable performance outputs, making it impossible to measure success in terms of shareholder wealth creation. Social inclusion expenditure represents another facet of sustainability, which embraces personnel welfare, community/project initiatives, and educational grants (Carroll & Shabana, 2010).

This is allied to the concept of corporate social performance, where social capital and economic success are linked with legitimacy. In Nigeria, a large share of what appears to be social inclusion expenditure reported appears to relate to widely published social inclusion expenditure and thus becomes a CSR initiative offering high visual impact, rather than to sustainable improvement in social welfare, which diminishes its long-run impact on shareholders' wealth. Transparency and reporting are another aspect of linking sustainability to result-oriented achievement in financial terms.

Dhaliwal et al. (2011) showed that better ESG transparency corresponds to lower capital costs and more investor confidence. However, the greenwashing process is still a problem when reporting changes can take place faster than the activity. While ESG disclosure among companies in the industrial goods sector in Nigeria is increasing today, limited uniformity in reporting procedures adversely affects credibility and comparability, which reduces its overall effectiveness in shaking investor perceptions or shareholder wealth.

Shareholder wealth is assessed in terms of earnings per share (EPS), market capitalization, and return on equity, which indicates both business performance and management efficiency. Xie et al. (2019) wrote that the creation of wealth is the principal aim of the corporate governance exercise, especially in publicly quoted firms where the managerial discretion affects investor confidence. Biddle et al. (1997) designate EPS as a measure of shareholder wealth that is important, congruent with agency theory, and further showed that stock returns and investor confidence are determined significantly by EPS. In Nigeria, changing EPS is ascribed to much volatility in macro-economic circumstances rather than sustainability performance. Some empirical testing of the effect of sustainability performance on EPS is warranted.

The empirical results in the literature from other contexts support the more complicated relation between sustainability performance and financial results. Eccles et al. (2014) showed that environmental and social scores positively affect EPS for Turkish companies. In contrast, earlier published results indicate that sustainability reporting improved company performance in Europe (Ameer & Othman, 2012). Results in the literature were, however, limited by brief observation periods, which reduced generalizability to the longer term. Similarly, Vo and Ellis (2017) discovered that ESG disclosure has a significant positive influence on EPS of Indonesian firms, a finding corroborated by Xie et al. (2019), Velte (2017) and Landi and Sciarelli (2019).

It follows from the above that, through the environmental, social, and governance dimensions, corporate sustainability practices can influence shareholders' wealth creation by shaping transparency, legitimacy, and stakeholder confidence. However, the empirical findings are consistent, coupled with those biased findings, especially in developing economies like Nigeria, where the industrial concern groups present a myriad of obstacles with respect to disclosure, a weak regulatory framework, and sustainability reporting practices. The impervious nature of corporate sustainability practices on the shareholders' wealth creation through a direct link from the sum of studies that have been carried out in Nigeria's industrial goods sector is a well-recognized gap in empirical appraisal.

Consequently, to fill this lacuna, the present study seeks to determine whether the corporate sustainability practices, measured by sustainability index score, environmental expenditure ratio, social expenditure ratio, and ESG disclosure, would meaningfully impinge on the shareholders' wealth creation as measured by the EPS of the listed industrial goods firms in Nigeria between 2015 and 2024. In consonance with the literature reviewed, the study seeks to test the following hypotheses:

H_{01}: *Sustainability index score has no significant influence on the EPS of listed industrial goods firms in Nigeria.*

H_{02}: *Environmental expenditure ratio has no significant influence on the EPS of listed industrial goods firms in Nigeria.*

H_{03}: *Social expenditure ratio has no significant influence on the EPS of listed industrial goods firms in Nigeria.*

H_{04}: *ESG disclosure score has no significant influence on the EPS of listed industrial goods firms in Nigeria.*

2. METHODOLOGY

We employed the ex-post facto research design coupled with a quantitative panel data approach to determine the impact of sustainability practice on shareholders' wealth of industrial firms listed on the Nigerian Stock Market. The ex-post facto research design was appropriate in this case, since the dependent (earnings per share, EPS) and independent variables (sustainability variables) have been in existence over the ten-year period of the study (2015–2024); therefore, experimental manipulation was not needed. Furthermore, the panel data analysis allowed us to combine both the cross-sectional (across firms) and time-series (across years) dimensions of the data to provide a more realistic estimate of the dynamic relationship between sustainability performance and financial performance.

The population of the study comprises all industrial goods firms listed on the Nigerian Stock Exchange (NGX). Due to the purposive sampling technique, only three major cement-producing firms were chosen: Dangote Cement Plc, Lafarge Africa Plc, and BUA Cement Plc. Nigeria's three biggest industrial companies represent a large percentage of the Nigerian industrial goods sector, generate a significant amount of greenhouse gas emissions through their operations, and disclose information about their sustainability efforts as well as other company performance metrics as publicly traded companies, providing an opportunity to validate both company disclosures and financial reporting. Given the size of each company (high market capitalization), the level of revenue generated, the scope of their production capacity, and the number of people employed, the relationship between green governance and shareholder value can be well examined.

All the data used in the study were secondary data collected from each of the annual and sustainability reports and investor relations of the aforemen-

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tioned firms, and were cross-checked from the filings of the Nigerian Stock Exchange (NGX), to ensure the accuracy and completeness of the information contained within.

The data collected in the panel consisted of means over 30 firm-year ramifications during 2015–2024. The variables were operationally defined, where the dependent variable, representing the wealth of shareholders, was earnings per share (EPS)(₦), and the independent variables were sustainability index score (SUST), environmental expenditure ratio (ENV), social expenditure ratio (SOC), and ESG disclosure score (DISC). The variables were determined on a yearly and annual basis, corresponding to the sustainability reporting periods. The relationships among the variables were modeled using the panel regression equation of the form:

$$EPS_{it} = \beta 0 + \beta 1 SUST_{it} + \beta 2 ENV_{it} + \beta 3 SOC_{it} + \beta 4 DISC_{it} + \mu_i + \varepsilon_{it}, \quad (1)$$

where EPS_{it} = Earnings per share of firm i for year t; $SUST_{it}$ = Sustainability index score; ENV_{it} = Environmental expenditure ratio; SOC_{it} = Social expenditure ratio; $DISC_{it}$ = ESG disclosure score; $\beta 0$ is the intercept; $\beta 1$, $\beta 2$, $\beta 3$, $\beta 4$ are the coefficients of the respective independent variables; μ_i represents the unobserved firm-specific effects; ε_{it}: Idiosyncratic error term.

Estimation was performed using the pooled ordinary least squares (OLS) estimator and fixed-effects model (FEM) estimators to allow for the presence of firm-specific effects across time. Following the estimation, a Hausman specification test was conducted to determine whether the fixed-effects or random-effects model should be used for inference. Afterward, diagnostic tests were applied to assess the validity of the model, specifically the presence of multicollinearity via the variance inflation factor (VIF) test, heteroscedasticity via the Breusch–Pagan test, and serial correlation via the Wooldridge autocorrelation test.

The data summary used for the estimation of the model is presented in Table 1, which provides a description of all firm variables, including sustainability index scores, environmental and social expenditure ratios, ESG disclosure scores, and the corresponding earnings per share values. The reliability and reproducibility of the data collected were verified by verifying each data source; because the majority of the data were retrieved from publicly accessible databases, it was possible to replicate the findings of this analysis.

3. RESULTS

The study sought to estimate the impact of corporate sustainability activities by industrial firms on shareholder wealth, measured by earnings per share (EPS). Table 1 presents panel data on the sustainability index scores, environmental expenditure ratio, social expenditure ratio, ESG disclosure scores, and EPS values for the study period.

The information gained through the descriptive evaluation suggests a continuous upward trend in EPS for all firms, with Dangote Cement Plc experiencing the best performance throughout the period. Figure 1 shows the trend in wealth created for shareholders, measured by EPS, across the study years.

Table 1. Environmental, social, and governance (ESG) performance and shareholder wealth dataset (2015–2024)

Source: Annual Reports, Sustainability Reports, and Investor Relations Pages (2015–2024).

Year	Company ID	Sust. Index	Env. Exp. %	Soc. Exp. %	ESG Disc. %	EPS (₦)
2015	Dangote Cement Plc.	60.0	0.37%	0.59%	66%	9.45
2016	Dangote Cement Plc.	62.0	0.33%	0.50%	68%	10.87
2017	Dangote Cement Plc.	64.0	0.27%	0.41%	70%	12.05
2018	Dangote Cement Plc.	65.0	0.27%	0.40%	72%	13.12
2019	Dangote Cement Plc.	67.0	0.29%	0.44%	74%	14.90
2020	Dangote Cement Plc.	65.7	0.26%	0.37%	76%	16.05
2021	Dangote Cement Plc.	67.7	0.22%	0.31%	78%	21.18
2022	Dangote Cement Plc.	69.3	0.22%	0.30%	80%	22.23
2023	Dangote Cement Plc.	71.7	0.19%	0.25%	84%	26.49

Table 1 (cont.). Environmental, social, and governance (ESG) performance and shareholder wealth dataset (2015–2024)

Year	Company ID	Sust. Index	Env. Exp. %	Soc. Exp. %	ESG Disc. %	EPS (₦)
2024	Dangote Cement Plc.	73.0	0.19%	0.26%	86%	29.55
2015	Lafarge Africa Plc.	65.7	0.88%	1.48%	74%	0.98
2016	Lafarge Africa Plc.	67.7	0.86%	1.46%	76%	1.10
2017	Lafarge Africa Plc.	69.7	0.81%	1.39%	78%	1.28
2018	Lafarge Africa Plc.	71.3	0.92%	1.52%	80%	1.42
2019	Lafarge Africa Plc.	73.3	1.03%	1.69%	82%	1.65
2020	Lafarge Africa Plc.	71.0	0.82%	1.26%	84%	1.91
2021	Lafarge Africa Plc.	73.0	0.82%	1.19%	86%	2.56
2022	Lafarge Africa Plc.	75.0	0.75%	1.05%	88%	2.90
2023	Lafarge Africa Plc.	77.3	0.76%	1.09%	90%	3.17
2024	Lafarge Africa Plc.	78.3	0.76%	1.09%	92%	3.31
2015	BUA Cement Plc.	58.0	0.57%	0.95%	62%	0.96
2016	BUA Cement Plc.	60.0	0.58%	0.94%	64%	1.12
2017	BUA Cement Plc.	62.0	0.58%	0.91%	66%	1.25
2018	BUA Cement Plc.	63.3	0.63%	0.94%	68%	1.38
2019	BUA Cement Plc.	65.3	0.65%	1.00%	70%	1.52
2020	BUA Cement Plc.	63.3	0.72%	1.10%	72%	1.87
2021	BUA Cement Plc.	65.3	0.70%	1.05%	74%	2.41
2022	BUA Cement Plc.	67.0	0.58%	0.89%	76%	2.67
2023	BUA Cement Plc.	70.0	0.57%	0.85%	80%	2.99
2024	BUA Cement Plc.	71.3	0.57%	0.84%	82%	3.06

Figure 1 demonstrates an upward trend in the earnings-per-share (EPS_{ne}) of Dangote Cement Plc., Lafarge Africa Plc, and BUA Cement Plc during this time frame. While the left vertical axis reflects the EPS for Dangote Cement Plc, which is significantly larger than that of Lafarge Africa Plc and BUA Cement Plc, the right vertical axis reflects the EPS for Lafarge Africa Plc and BUA Cement Plc. As indicated in Figure 1, each firm has shown a similar upward trend in EPS during the same period; however, Dangote Cement Plc experienced the largest increase in EPS, indicating greater creation of value for shareholders when compared to the other two companies. In order to

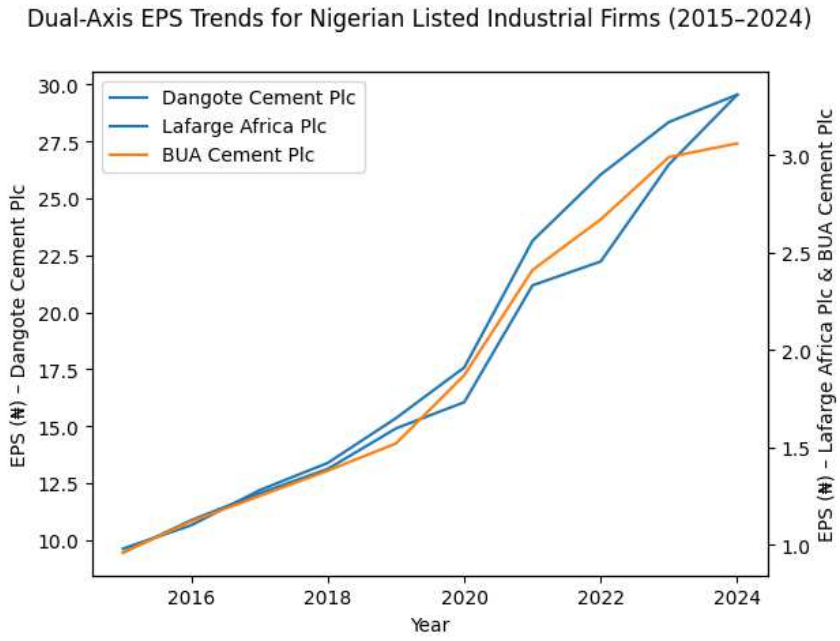

Figure 1. Dual-axis earnings per share (EPS_{ne}) trends for Nigerian listed industrial firms (2015–2024)

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Table 2. Panel regression coefficients for ESG predictors and earnings per share (EPS_{ne})

Predictor	Coefficient (B)	Std. Error	t-value	Sig. (p-value)
Constant	–5.214	3.102	–1.681	.103
Sustainability Index Score	0.186	0.071	2.620	.013 **
Environmental Expenditure Ratio	–1.908	1.857	–1.028	.312
Social Expenditure Ratio	5.487	2.358	2.327	.027 **
ESG Disclosure Score	0.212	0.085	2.494	.018 **

Note: p < .05 indicates statistical significance.

make all three EPS trends clear and unambiguous, a dual-axis specification is used to resolve the scale dominance that exists among firms due to significant differences in the magnitude of earnings.

The Hausman test result ($p < .05$) confirmed that the fixed-effects model (FEM) was appropriate. Table 2 presents the estimated coefficients and their levels of significance.

Table 2 denotes that the sustainability index score, social expenditure ratio, and ESG disclosure score are statistically significant independent predictors of earnings per share. The probabilities indicate that they have statistically produced a section that would be positively related to share price appreciation. This means that sustainability involvement, social spending, and appropriate transparency in item disclosures are directly beneficial to the wealth of shareholders. On the other hand, the environmental expenditure ratio has a negative but statistically non-significant relationship ($p = .312$), meaning that there is no immediate profitability from these environmental costs; yet it is a guess that there will be developmental value. The inertness in fit-modeling and diagnostics in Table 3 reflects the robustness of the estimation.

The model has a strong explanatory power ($R^2 = .674$), confirming that the variance in EPS_{ne} can be explained by the sustainability-related variables. The overall F-statistic ($F = 12.83$, $p < .001$) confirms the simultaneous significance of the predictors.

The hypotheses were tested via the coefficient results. For the sustainability index score ($\beta_1 = 0.186$, $p = .013$), social expenditure ratio ($\beta_3 = 5.487$, $p = .027$) and ESG disclosure score ($\beta_4 = 0.212$, $p = .018$) the null hypothesis of no effect was rejected. However, the environmental expenditure ratio ($\beta_2 = –1.908$, $p = .312$) did not reject the null hypothesis; the implication of this is that increased sustainability engagement, as well as increases in social investment and quality of ESG disclosure lead to a better position for shareholders in terms of wealth among Nigeria's industrial companies, but do not provide an investor with an immediate economic benefit as it relates to environmental expenditures. These findings propound the view that socially responsible and transparent firms are better placed to create sustainable value for their shareholders within emerging economies.

4. DISCUSSION

The results of this study corroborate the growing consensus that environmental, social, and governance (ESG) performance is an important factor driving shareholder value among quoted manufacturing firms in Nigeria. The statistically significant positive effects of sustainability index score,

Table 3. Model summary and diagnostic tests for fixed effects regression

Statistic	Value	Interpretation
R^2	0.674	Model explains 67.4% of the variance in EPS_{ne}
Adjusted R^2	0.674	Goodness of fit remains stable
F-statistic	12.83	Model is statistically significant (p < .001)
Hausman Test	p < .05	Fixed Effects Model preferred
VIF	< 5	No multicollinearity detected
Breusch–Pagan Test	p > .05	Homoscedastic residuals
Wooldridge Test	p > .05	No autocorrelation detected

social expenditure ratio, and ESG disclosure score on earnings per share (EPS) provide further evidence supporting the widely accepted global empirical evidence that firms that perform better in sustainability terms generally perform financially better than their peers. This result corroborates the conclusions of Eccles et al. (2014), who found that high-sustainability firms significantly outperform low-sustainability firms in both stock market and accounting performance in the long term.

The study thus corroborates the argument that firms that have integrated social and sustainability considerations into their businesses produce better earnings and enhance shareholder wealth. Nollet et al. (2016) also found a positive relationship between ESG disclosure and profitability, noting that the transparency of ESG reporting increased investor confidence and resulted in better financial performance. This finding again corroborates the present study in that the ESG disclosure score has a significant and positive effect on EPS, again pointing to the fact that investors in emerging markets like Nigeria are becoming increasingly responsive to satisfactory information about the sustainability of the firms in which they invest.

The observed positive effect of the social expenditure ratio on company performance also bolsters the theoretical argument that socially responsible behavior positively affects competitive advantage. Margolis and Walsh (2003) concluded, in their meta-analysis of more than 100 empirical studies, that corporate social performance generally showed a positive connection with financial performance. Accordingly, these findings support their conclusion that social expenditures devoted to employee welfare, community development, and stakeholder relationships have budgetary effects that will eventually yield dollar savings. In a similar study, El Ghoul et al. (2011) found that social responsibility expenditures on employee relations and community welfare had significantly positive effects on the performance of organizations in the Nigerian industrial sector. Thus, this study lends credence to the theory that social investments result in both reputational capital and operational efficiencies, which will be converted into increased stockholder wealth through increased income.

In contrast, the negative relationship of the environmental expenditure ratio with EPS differs from works done in better-regulated and supervised countries, where it has been found that environmental investments also yield measurable financial gains. For example, Friede et al. (2015) showed that environmental projects produce, among other things, cost savings and reduced risks that yield enhanced profitability. The lack of similarity to the Nigerian situation can perhaps be ascribed to different national degrees of strictness in its regulations, their enforcement, and different stakeholder expectations. Environmental practices in the industrial sector in Nigeria may still be in their formative phases and compliance types of operations, which means that they lack the strategic transformations necessary to produce financial gains immediately. Also, the short-term costs in relation to environmental projects, such as waste/garbage treatment and emission controls, may lessen the financial profitability in the short term, even though these may later yield financial gains as the institutional environment matures and stakeholders become more aware.

Overall, the conclusions derived from the findings of this study are of considerable importance and add to the increasing body of empirical evidence supporting the financially relevant aspects of ESG integration. The findings confirm that, in a developing country such as Nigeria, the norm of reliance on sustainability practices is instead a positive asset in creating wealth for shareholders. However, the context-based nuances discovered in this study indicate that certain aspects of ESG, notably environmental expenditure, exhibit lagged effects that are not effectively captured by short-term profitability measures. Hence, the results indicate that a longer-term perspective is required when evaluating the profitability implications of sustainable investments in developing economies. Future research could undertake further analyses, bringing in the lag variable, or by using different measures of environmental performance, to invite the evaluation of the lagged financial effects of environmental behavior. In addition, in light of the evolving exigencies of regulatory pressures and investor demands, future research might examine how increasing institutional pressures and global reporting standards are altering the sustainability–performance nexus in Nigeria's industrial economy.

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CONCLUSION

The objective of this paper was to test the association between green governance practices and shareholder wealth in listed cement companies in Nigeria. The empirical findings of the fixed-effects panel regression model indicate that the association explained by the sustainability-related variables has a significant percentage of variation in EPS. To be more precise, the sustainability index score, social expenditure ratio, and ESG disclosure score have a positive and statistically significant relationship with EPS, and the environmental expenditure ratio is negatively correlated, but statistically non-significant.

These findings lead to the conclusion that the practice of sustainability governance has different implications for shareholder wealth in the cement industry in Nigeria. The quality of governance, social investment, and public ESG reporting seems to be value-enhancing to the investors on a short-term basis, but environmental spending does not show a direct effect on earnings in the period under study. This implies that sustainability can enhance shareholder value when it has become institutionalized by way of quantifiable governance systems and existing disclosure systems, and the financial reward of environmental investments can be achieved on longer terms or via avenues that are not recognized by short-term earnings perks.

AUTHOR CONTRIBUTIONS

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